

DEPARTMENT OF BIOLOGY
GRADUATE FACULTY RESEARCH INTERESTS

BECK, DAVID L., Assistant Professor (Ph.D., University of Virginia, 2005)

Research Interests: Infectious diseases of humans.

Current Research Projects: Currently finishing a project on tickborne diseases in Texas. We are developing a project on small colony variant *Staphylococcus aureus* which is commonly found in Cystic Fibrosis patients, and other chronically infected patients.

BROWN, CHRISTOPHER A., Associate Professor (Ph.D., University of Texas at Arlington, 1998).

Research Interests: Ecology, life history evolution, and behavior of terrestrial arthropods, primarily scorpions and spiders; understanding the effects of autotomy (limb loss) on ecology and behavior; arthropod food webs in riparian zones.

Current Research Projects: Ecology of a riparian wolf spider community in southeastern Arizona; submersion tolerance in riparian wolf spiders; effects of leg loss on behavior and ecology in Arizona wolf spiders; life history evolution in the Sky Island species of *Vaejovis* scorpions from Arizona; behavioral ecology of the native Tennessee scorpion *Vaejovis carolinianus*.

CARVER, BRIAN D., Assistant Professor (Ph.D., The University of Memphis, 2009).

Research Interests: Mammalian community dynamics, conservation of rare mammals, bat biology and management.

Current Research Projects: Effect of acoustic detector type and microphone directionality on the detection of bats; impact of eastern hemlock stands on small mammal community composition; status and ecology of eastern spotted skunks (*Spilogale putorius*) in Tennessee.

COHEN, BRADLEY S., Assistant Professor (Ph.D., University of Georgia, 2014).

Research Interests: Wildlife Ecology and management; animal physiology and behavior; predator-prey interactions; ecology and management of game animals.

Current Research Projects: Delineation of white-tailed deer management units in Tennessee; reproductive ecology of eastern wild turkeys; direct and indirect effects of prescribed fire on wild turkeys; male wild turkey mating systems; effects of hunters, natural predators, and harvest management strategies on wild turkey gobbling activity, behavior, and population growth; the effect of baiting on harvest susceptibility of white-tailed deer; population estimation and range expansion of black-bellied whistling ducks; translocation ecology of eastern wild turkeys in Texas; movements, space use, and behavior of brooding eastern wild turkeys.

COMBS, DANIEL L., Professor (Ph.D., University of Missouri, 1987).

Research Interests: Ecology and behavior of avian wildlife species, especially waterfowl; habitat use and natural history of reptiles and amphibians.

Current Research Projects: Movement patterns, intra-flock associations, and social biology of Canada geese.

COOK, S. BRADFORD, Professor (Ph.D., Southern Illinois University, 1994).

Research Interests: Ecology of freshwater invertebrates; fish propagation; fish parasitology; feeding ecology and bioenergetics of freshwater fishes; and biotic indices.

Current Research Projects: Culture and performance of introduced southern Appalachian Brook Trout in Tennessee; colonization of aquatic macroinvertebrates following piscicide treatment.

GUNDERSON, JOHN H., Associate Professor (Ph.D., University of California at Berkeley, 1981).

Research Interests: Microbial ecology and evolution; symbiosis.

Current Research Projects: Legionella-like amoebal pathogens; life cycles of marine cestodes.

HAYSLETTE, STEVEN E., Professor (Ph.D., Auburn University, 2001).

Research Interests: Wildlife ecology and management; avian ecology, behavior, and nutrition; ecology and management of upland game birds.

Current Research Projects: Physiological indices of habitat quality in northern bobwhites; mechanisms of diet selection in avian granivores; seed selection and agonistic behavior of non-targets at bird feeders.

HURT, CARLA R., Associate Professor (Ph.D. Arizona State University, 2005).

Research Interests: The processes of speciation and diversification in marine invertebrates and the implications that these processes have on conservation of biodiversity. Specifically, I use a diversity of molecular tools to 1) identify taxonomic lineages and cryptic diversity, 2) reconstruct phylogenetic histories and the geographic context of species radiations, 3) examine ecological and developmental factors that promote and sustain species reef diversity and 4) assess the geographic structure of genetic variation within and marine symbiotic communities.

KISSELL, JR., ROBERT E., Professor (Ph.D. Montana State University, 1996).

Research Interests: Species-habitat associations and population ecology of mammals, especially fur bearers and large mammals.

Current Research Projects: Climate change mediated invasion of Utah Juniper on Curlleaf Mountain Mahogany and its effect on Rocky Mountain bighorn sheep; consistency of bias rates of road-based distance sampling for white-tailed deer; factors related to white-tailed deer management unit delineation; and, swamp rabbit behavior and ecology.

KROSINICK, SHAWN E., Associate Professor (Ph.D., The Ohio State University, 2006).

Research Interests: Plant taxonomy, molecular systematics, floral development, plant morphology and anatomy, and evolutionary developmental biology.

Current Research Projects: Evolution of *CRC* gene expression in *Passiflora* nectaries, developmental changes leading to dioecy in Old World *Passiflora*, evolution of self-compatibility in Australian *Passiflora*, taxonomic revision of the *Passiflora bilobata* clade; monograph of *Passiflora* supersection *Disemma*

MURDOCK, JUSTIN N., Associate Professor (Ph.D., Kansas State University, 2008).

Research Interests: Algal ecology, nutrient cycling, stream community ecology, disturbance ecology, microscopy and imaging techniques.

Current Research Projects: Assessment of wetland restoration on nutrient retention and denitrification rates. Drought impacts on hypoxia and nutrient cycling in agricultural lakes. Factors regulating the spread of the nuisance alga *Didymosphenia geminata* (Didymo) in streams. Watershed alteration effects on macroinvertebrate community structure and emergence patterns. Use of infrared microspectroscopy to detect cellular level harmful algal responses to environmental change.

ROGERS, MARK W., (Ph.D., University of Florida, 2007).

Research Interests: Fisheries ecology and management, aquatic food webs, invasive species, population dynamics and modeling

Current Research Projects: Evaluation of Tennessee sport fisheries; Genetic evaluation of stocking success in Tennessee; Movement and lock and dam passage of Asian Carp; Relative densities of Asian Carp in the Tennessee and Cumberland river drainages; Evaluation of the effects of climate change and land use on fisheries harvests in lakes.

ROSENBERGER, AMANDA F., (Ph.D. Virginia Polytechnic Institute and State University, 2003).

Research Interests: Ecology and conservation of freshwater biota, including fish, mussels, and crayfish, with an emphasis on the role of ecological processes in shaping aquatic organisms' distributions, population characteristics, and community structure.

TWING, KATRINA I., Assistant Professor (Ph.D., Michigan State University, 2015)

Research Interests: Understanding how microbes interact with each other and their environments by looking at their genes. Bioinformatics; Next-generation sequencing; Microbial ecology; Environmental microbiology; Microbiomes; Extremophiles; Marine microbiology; Geomicrobiology

Current Research Projects: Microbial ecology of highly alkaline hydrothermal vents, subsurface rocks, and high pH ground waters. Tracing and tracking contamination in precious microbial samples.

WHEELER, CHRISTOPHER (KIT) C., Assistant Professor (Ph.D., Utah State University, 2014).

Research Interests: stream fish ecology, freshwater biodiversity conservation, flow ecology, quantitative population and community modeling

Current Research Projects: aquatic resource survey of Arnold Air Force Base; dynamic multistate models for stream fishes; quantifying nutrient inputs from migratory freshwater fishes; native fish conservation and ecology